

# PPIC Statewide Survey Methodology

*Updated February 1, 2023.*

The PPIC Statewide Survey was inaugurated in 1998 to provide a way for Californians to express their views on important public policy issues. The survey provides timely, relevant, nonpartisan information on Californians' political, social, and economic opinions. It seeks to inform and improve state policymaking, raise awareness, and encourage discussion of policy issues. PPIC has interviewed more than 400,000 Californians in about 200 surveys focused on general topics, specific areas (such as K–12 education and the environment), and regional issues.

The PPIC Statewide Survey currently conducts web-based surveys using a [probability-based online panel methodology](#) but has conducted telephone surveys using a [random digit dialing \(RDD\) methodology](#) conducted on landline and cell phones in the past.

## Best Practices

The PPIC Statewide Survey follows the best practices of the American Association for Public Opinion Research (AAPOR), as detailed in its [Code of Professional Ethics and Practice](#). PPIC is a charter member of AAPOR's Transparency Initiative. Launched in October 2014, the Transparency Initiative promotes openness and disclosure in survey methods and practice. PPIC is also a member of the National Council on Public Polls (NCPP), which sets the highest professional standards for public opinion pollsters and seeks to broaden understanding of how polls are conducted and how to interpret poll results.

The PPIC Statewide Survey invites input, comments, suggestions, and information from policy and public opinion experts and from its own advisory committee. The PPIC Statewide Survey Advisory Committee includes a diverse group of experts and leaders from national survey organizations (such as the Kaiser Family Foundation and SurveyMonkey), foundations (including the David and Lucile Packard Foundation and the California Endowment), as well as universities, media, businesses, and community organizations. However, survey methods and questions and the content of reports and press releases are determined solely by the survey director, Mark Baldassare, and survey staff.

## Probability-Based Online Panel Methodology

### Sample Sizes

PPIC Statewide Surveys conducts online interviews with at least 1,500 California adults. In each survey report, we provide the unweighted sample sizes for the overall sample, registered voters, likely voters, and other special groups we might be examining. (See the methodology section of individual survey reports for more information about sample sizes.) By comparison, many national polls include interviews with 1,000 adults. PPIC's large sample sizes allow us to capture the regional, racial/ethnic, demographic, and political diversity of the state's adult population. For example, we are able to examine separate findings among as many as five regions: the Central Valley, San Francisco Bay Area, Los Angeles County, Orange/San Diego Counties, and the Inland Empire. We can also examine separate findings among Latinos and non-Hispanic whites, and among non-Hispanic Asian Americans and African Americans, when the unweighted sample sizes reach our minimum standard of approximately 100; among US-born and foreign-born adults (both naturalized citizens and non-citizens); among different age, education, income, and homeownership groups; and according to political affiliation (Democrats, Republicans, and independents). The large sample size also lets us analyze results among parents of children age 18 and younger and parents of children attending public schools. To conduct separate analysis of a subgroup, we require an unweighted sample size of approximately 100 or more. Our large overall sample sizes allow us to bring additional perspective to

local, state, and federal policymakers who need a clear understanding of public perceptions and attitudes, including robust information about the experiences and opinions of different political, regional, racial/ethnic, and other demographic groups.

## Languages

Interviews are conducted in English and Spanish, according to respondents' preferences. In some online surveys, interviews are also conducted in Chinese, Vietnamese, and Korean, according to the respondents' preferences.

## How Respondents Are Chosen

Respondents are chosen based on their residence in California, their age (18 and older), and their status as an Ipsos KnowledgePanel member. As with other highly respected nonpartisan polling organizations who have national-level panels—such as the Pew Research Center and NORC at the University of Chicago—Ipsos KnowledgePanel members are recruited through a probability sampling method and include both those with internet access and those without. KnowledgePanel provides internet access for those who do not have it and, if needed, a device to access the internet when they join the panel. KnowledgePanel is primarily recruited using Address-Based Sampling (ABS) methodology, which improves population coverage, particularly for hard-to-reach individuals such as young adults and minority subgroups. ABS-recruited Latinos are supplemented with a dual-frame RDD sampling methodology that targets telephone exchanges associated with areas with a higher concentration of Latinos to provide the capability to conduct representative online surveys with Latinos, including those who speak only Spanish. KnowledgePanel's recruitment was originally based on a national RDD frame and switched to the primarily ABS-based methodology in 2009. KnowledgePanel includes households with landlines and cell phones, including those with cellphones only and those without phones. ABS allows probability-based sampling of addresses from the US Postal Service's Delivery Sequence File (DSF). The DSF-based sampling frame we use for address selection is enhanced with a series of refinements—such as the appendage of various ancillary data to each address from various commercial and government data sources—to facilitate complex stratification plans. Taking advantage of such refinements, quarterly samples are selected using a stratified sampling methodology that aims to retain the representativeness of our panel. Individuals residing at randomly sampled addresses are invited to join KnowledgePanel through a series of mailings (in English and Spanish); non-responders are phoned when a telephone number can be matched to the sampled address. Household members who were randomly selected can indicate their willingness to join the panel by returning a completed acceptance form in a postage-paid envelope, calling a toll-free hotline and speaking to a bilingual recruitment agent, or accessing a dedicated recruitment website.

KnowledgePanel continually recruits new panel members throughout the year to offset panel attrition.

## Interviewing Process

An outside firm, Ipsos, conducts the interview process for online surveys using its KnowledgePanel for the PPIC Statewide Survey. Ipsos is an international market and opinion research organization. The Ipsos KnowledgePanel is the largest national probability-based panel, totaling more than 55,000 panelists nationwide and about 6,000 in California. The KnowledgePanel provides the highest level of accuracy and sample representativeness available in online research for measurement of public opinion, attitudes, and behaviors. Its other clients include the Harvard University Youth Poll, Kaiser Family Foundation, Langer Research Associates, the National Election Study, and the Pew Research Center. The Pew Research Center also works with Ipsos to recruit panelists, manage their American Trends Panel, and conduct surveys.

The KnowledgePanel offers rigorous design, superior coverage and panel size, and sound methodology. To secure high rates of response both email and telephone calls are used to encourage nonresponding panel members to partake in surveys to which they are assigned. Typically, email reminders are sent after three days and phone calls are initiated about four days later. Ipsos provides a modest incentive to encourage participation and foster member loyalty. Participant fatigue is addressed by ensuring that panelists take on average two KnowledgePanel surveys a month, thus minimizing respondent fatigue and attrition. The KnowledgePanel leads the online research industry in terms of the proportion of the respondent pool that actually participates in our research. This is partly the result of our efforts to “convert” non-responders.

## Describing Differences of Opinion

When reporting differences in results, the PPIC Statewide Survey uses the 95 percent confidence interval to determine significance. When comparing results, a significant difference between all adults in two different surveys is around 7 points. Significant differences between groups within one survey are somewhat larger. In discussing differences within a survey we use consistent terminology to describe them. For example, we would call results with differences that are less than significant “similar,” and use an adjective such as “somewhat” to reflect a slight difference, or “much” to reflect a difference that we consider sizeable.

When a respondent refuses to answer a given question, the answer is coded as a refusal, which is then treated as missing data. Missing data are excluded from analysis, although missing data on one question does not exclude a respondent from the analysis of a question to which they did respond.

## Response Rates

As a member of the American Association of Public Opinion Researchers (AAPOR), Ipsos follows the AAPOR standards for response rate reporting. However, the AAPOR standards were established for single survey events and not for online or other longitudinal panels. Callegaro and DiSogra (2008) developed examples of response rates calculated for KnowledgePanel surveys and detailed a number of response formulae. In addition, they developed the concept of “completion rate” applicable to online panels. The completion rate for KnowledgePanel is 65 percent, with some variation, depending on survey length, topic, and other fielding characteristics. In contrast, non-probability, opt-in, online panels typically achieve a survey completion rate in the 2 percent to 16 percent range. As a result of these standard metrics, panels can be more adequately compared (total number of panel members alone is an incomplete measure of a panel’s “scalability”). The effective panel size also depends on this completion rate. For example, KnowledgePanel requires only about 1,850 panelists to obtain 1,200 completed surveys, whereas a non-probability, opt-in sample may require a starting sample of 50,000 invitations or more to obtain 1,200 completed surveys. Thus, KnowledgePanel’s size of approximately nationwide sample of about 60,000 can be comparable to an effective opt-in panel size of 1.7 million (assuming a 2% completion response rate for the opt-in panel).

## Margin of Error

Despite slight fluctuations from survey to survey, the sampling error, taking design effects from weighting into consideration, is normally about  $\pm 3.5$  percent at the 95 percent confidence level for our surveys of 1,500 adults. This means that 95 times out of 100, the results will be within about 3.5 percentage points of what they would be if all adults in California were interviewed. The sampling error for subgroups is larger. Details about sampling errors of a given survey are included in the methodology section of each report. Sampling error is only one type of error to which surveys are subject. Results may also be affected by factors such as question wording, question order, and survey timing.

We report the margin of error taking design effects from weighting into consideration, to account for the effect sampling and weighting techniques may have on survey estimates.

## Adults, Registered Voters, and Likely Voters

For many survey questions, the findings are presented for registered voters or likely voters only. Respondents who report that they are citizens and that they are absolutely certain they are registered to vote in California are included in the registered voter subsamples. Findings are also presented for Democrats, Republicans, and independents. To determine a respondent's party affiliation, we ask respondents if they are registered as Democrats, Republicans, with another party (which we then ask them to specify) or as decline-to-state or no party preference (independent) voters. We ask for party registration rather than party identification because the California Secretary of State collects registration data by party. This allows us to weight the data by party, to accurately reflect the voting population. There are no state-level data available for party identification.

Our definition of likely voters is aimed at identifying frequent voters in elections—as opposed to estimating the voter turnout in an upcoming election. Using political science research on the demographic and attitudinal predictors of voting behavior, we define the registered voters in our surveys as likely voters if they (a) report voting always or nearly always, (b) also intend to vote in the upcoming election (during an election cycle), (c) also have followed election news very or fairly closely (during an election cycle), and (d) either

report having a great deal or fair amount of interest in politics, and have resided at their current residence less than five years and have at least some college education; or

report having at least a little interest in politics, and have resided at their current residence for more than five years.

## Weighting

The characteristics of PPIC Statewide Survey samples are closely comparable to characteristics of California's adult population and political party registration; however, the data are statistically weighted to account for any differences in demographics, party registration, and telephone service.

The sample of Californians is first weighted using an initial sampling or base weight that corrects for any differences in the probability of selection of various segments of the KnowledgePanel sample. This base weight is further adjusted using an iterative proportional fitting (raking) procedure that aligns sample demographics to population benchmarks from the 2016–2020 Census Bureau's American Community Survey (ACS) as well as party registration benchmarks from the California Secretary of State's voter registration file. Ipsos uses the US Census Bureau's 2016–2020 American Community Survey's (ACS) Public Use Microdata Series for California (with regional coding information from the University of Minnesota's Integrated Public Use Microdata Series for California) to compare certain demographic characteristics of the survey sample—region, age, gender, race/ethnicity, and education—with the characteristics of California's adult population. The survey sample was closely comparable to the ACS figures. We also used voter registration data from the California Secretary of State to compare the party registration of registered voters in our sample to party registration statewide.

Surveys almost always develop a final weight for the completed interviews that brings the weighted sample into agreement with known population distributions on key socio-demographic and geographic variables. One of the most commonly used final weighting procedures is raking (also called sample balancing). PPIC employs this procedure in weighting its survey samples. Raking is an iterative procedure that provides the ability to control on two or more marginal dimensions to derive the weights. One specifies a convergence criterion and a maximum number of iterations, and in most situations the algorithm converges and the resulting weights provide for very close control on all of the

dimensions included in the raking. For PPIC surveys, in addition to the initial sampling or base weight that corrects for any differences in the probability of selection of various segments of the KnowledgePanel sample, data are raked to control totals on five dimensions: (1) age group by gender by region, (2) race/ethnicity by region, (3) education level, (4) party affiliation by region, and (5) region. During the raking procedure very high or very low weight values are trimmed to reduce the impact of the variability of the weights in the precision of the survey estimates.

## Random Digit Dialing Methodology

### Sample Sizes

All PPIC Statewide Surveys include interviews with at least 1,700 California adults. In each survey report, we provide the unweighted sample sizes for the overall sample, registered voters, likely voters, and other special groups we might be examining. (See the methodology section of individual survey reports for more information about sample sizes.) By comparison, many national polls include interviews with 1,000 adults. PPIC's large sample sizes allow us to capture the regional, racial/ethnic, demographic, and political diversity of the state's adult population. For example, we are able to examine separate findings among as many as five regions: the Central Valley, San Francisco Bay Area, Los Angeles County, Orange/San Diego Counties, and the Inland Empire. We can also examine separate findings among Latinos and non-Hispanic whites, and among non-Hispanic Asian Americans and African Americans when the unweighted sample sizes reach our minimum standard of approximately 100; among US-born and foreign-born adults (both naturalized citizens and non-citizens); among different age, education, income, and homeownership groups; and according to political affiliation (Democrats, Republicans, and independents). The large sample size also lets us analyze results among parents of children 18 and younger and parents of children attending public schools. To conduct separate analysis of a subgroup, we require an unweighted sample size of approximately 100 or more. Our large overall sample sizes allow us to bring additional perspective to local, state, and federal policymakers who need a clear understanding of public perceptions and attitudes, including robust information about the experiences and opinions of different political, regional, racial/ethnic, and other demographic groups.

### Languages

Interviews are conducted in English and Spanish according to respondents' preferences.

### How Respondents Are Chosen

Similar to the methods of highly respected nonpartisan polling organizations that conduct national-level surveys—such as the Pew Research Center, the Washington Post, and Gallup—PPIC uses random-digit-dialing (RDD) to sample both landline and cell phone numbers. This method allows for random sampling of households within California, which means that each person in the population has an equal probability of being selected.

Some polling organizations use registration-based sampling (RBS), which draws telephone numbers from voter registration lists. We do not use RBS because it conflicts with the PPIC Statewide Survey's mission to be inclusive of all California adults 18 years of age and older and to provide an accurate profile of Californians' views on important issues. According to the California Secretary of State, anywhere between 68 and 80 percent of eligible adults have been registered to vote in recent times, which means that RBS does not reach a significant proportion of California adult residents. Furthermore, the voting population is not the same as the total adult population: voters tend to be

more affluent and older than the total population, and they are more likely to be white, homeowners, and college graduates. Moreover, RBS does not reach the entire universe of registered voters: it is optional to provide a telephone number when registering to vote and not always possible to find telephone numbers for voters who did not provide them when they registered. There is also the problem of inaccurate information, such as disconnected numbers and numbers that are out of date (e.g., a voter has changed numbers without informing the local registrar of voters).

By contrast, the RDD method ensures that the total adult population—including all adults that identify themselves as registered to vote in California—can be represented statistically, and that sampling error can be assessed for each survey. PPIC does use the voter registration data from the California Secretary of State to compare the party registration of registered voters in our survey samples—Democrat, Republican, independent (“no party preference” or “decline-to-state”) voters, and other parties—to statewide party registration.

After eligible telephone numbers are compiled, business numbers are removed via a matching process; numbers that are non-working or are not in service are also eliminated. Probability sampling is used to draw numbers for the landline sample. The number of telephone numbers randomly sampled from within a given county is proportional to that county’s share of telephone numbers. Landline interviews are conducted using a computer-generated random sample of numbers provided by Survey Sampling International that ensures that both listed and unlisted numbers are called. All landline telephone exchanges in California are eligible for selection. Once a household is reached, random selection of a household member occurs using the last birthday method to avoid biases in age and gender. In this technique, the person who answers the phone is asked to give the phone to the adult in the household with the most recent birthday.

The PPIC Statewide Survey employs a partial overlap design: a portion of our sample for each survey is comprised of respondents who completed a PPIC Statewide Survey interview in the past six months and agreed to be recontacted. There are numerous advantages to this design, including effective targeting, improved precision, the ability to estimate within-person change over time, and no adverse effect on bias or variance (since 70 percent of respondents are selected from a new sample).

Cell phone numbers are dialed by hand and interviews are conducted using a computer-generated random sample of cell phone numbers drawn through a dedicated wireless bank and provided by Survey Sampling International. All cell phone numbers with California area codes are eligible for selection.

For both cell phones and landlines, telephone numbers are called as many as eight times. When no contact with an individual is made, calls to a number are limited to six. Also, to increase our ability to interview Asian American adults, we make up to three additional calls to phone numbers estimated by Survey Sampling International as likely to be associated with Asian American individuals.

## Interviewing Process

An outside firm, Abt Associates, conducts the live interviews for the PPIC Statewide Survey. Abt Associates is a full-service global strategy and research organization. Abt Associates’ Data Science, Surveys and Enabling Technologies (DSET) division specializes in public policy and opinion surveys, banking and finance, telecommunications, media, energy, transportation, insurance, and health care. It has large, centralized, and fully supervised telephone interviewing facilities in the United States, with a capacity of 300 fully monitored computer-assisted telephone interviewing stations, as well as multiple-language telephone interviewing capabilities. Its other clients include the Pew Research Center, the Washington Post, the Annenberg National Election Survey, and the RAND Corporation. PPIC has worked exclusively with Abt Associates on PPIC Statewide Surveys since 2003 because of Abt’s impeccable reputation for high-quality telephone interviewing in multiple languages. Abt Associates also excels in adapting survey methodology to the changing times. The company offers expertise in

statistically weighting survey samples to account for telephone service and other population characteristics. The firm came highly recommended by two of the nation's leading nonpartisan research and polling organizations: the Pew Research Center and the Kaiser Family Foundation.

Interviewing for PPIC projects is conducted from Abt Associates' New York, Florida, Texas, and West Virginia locations. The company trains interviewers thoroughly before each project, with project directors involved. Interviewers are also briefed before each shift on any revisions made to a survey or additional training issues that may have arisen from the previous night's interviewing. The interviewer-to-supervisor ratio ensures optimal quality control on any given shift. Interviews take an average of 17 to 18 minutes to conduct.

## Landlines and Cell Phones

Cell phone usage in the United States has increased rapidly over the past decade. According to the most recent estimates from the Centers for Disease Control and Prevention's National Health Interview Survey (NHIS), 68.7 percent of US adults live in households that are cell phone-only, while about 1.7 percent live in landline-only households and about 28.9 percent live in households with both a landline and wireless device. About 1 percent of US adults live in households that have no phone. The NHIS is considered the most reliable source of information about cell phone usage in the United States.

The PPIC Statewide Survey includes interviews conducted on landline phones and cell phones: 75 percent of interviews are conducted on cell phones and 25 percent on landlines. Respondents can have landline service only, cell phone service only, or have both landline and cell phone service.

It is important to include cell phones to reach a large proportion of the population and avoid coverage issues. Younger adults are more likely than older adults to live in households that have wireless devices only (87.4 percent of adults aged 25 to 29 and 86.4 percent of adults 30 to 34 live in wireless-only households). Also, lower-income adults are more likely than upper-income adults; Hispanic adults are more likely than non-Hispanic whites, African Americans, and Asian Americans; renters are far more likely than homeowners; and adults living with unrelated housemates are far more likely than others to live in households with only wireless devices. Furthermore, 16.3 percent of adults live in dual-phone-service households where cell phones are used for all or almost all calls. In sum, by excluding or conducting few interviews on cell phones, surveys would be more likely to underrepresent young adults, Hispanics, those with lower incomes, those who live with unrelated adult housemates, those who rent their homes, and those who rarely use their landline service.

We consult with Abt Associates about how many cell phone interviews to include in our surveys, about population estimates for telephone service in California, and for assistance in creating appropriate statistical weights to adjust for telephone service and other factors.

There are additional methodological considerations when including cell phone interviews in a survey. Contrary to popular opinion, surveys are not subject to national do-not-call rules, and survey researchers may contact people on their cell phones. However, researchers must dial cell phone numbers manually—automatic dialing can be used only with landline phones. This makes cell phone interviews more costly. There are also ethical considerations. First, the respondent could incur a cost by accepting the call if charges are based on minutes used. Second, if a potential respondent is driving or otherwise occupied, conducting the interview could pose a safety risk and/or distraction. To address the first issue, most researchers—including PPIC—offer cell phone respondents a small reimbursement to cover the potential cost of completing the interview; this too increases the cost of conducting cell phone interviews. To address the second issue, researchers—also including PPIC—may schedule a callback if the respondent is driving or in some other insecure position. A final consideration is that researchers cannot be sure of the cell phone user's geographic location based on the number's area code; this is especially true now that landline numbers can be ported to a wireless device. Although only cell phone numbers with California area codes are included in our sample, additional questions in the

survey are asked to ensure the respondents are California residents and to determine which California county they live in.

In 2011, the National Center for Health Statistics started releasing state-level estimates for telephone usage (landline service only, cell phone service only, landline and cell phone service) for the adult population of California using data from the NHIS and the Census Bureau’s American Community Survey (ACS). With assistance from Abt Associates, we developed a reasonably accurate set of telephone usage estimates for use in PPIC’s 2022 statewide surveys by modeling state-level estimates of California adults living in households with a telephone from 2015 to 2019 and then projecting these estimates to 2022. Based on this information, an updated set of telephone usage estimates for PPIC’s 2021 statewide surveys is as follows:

Cell only	68.7%
Landline only	2.2
Landline and cell	29.1

## Describing Differences of Opinion

When reporting differences in results, the PPIC Statewide Survey uses the 95 percent confidence interval to determine significance. When comparing results, significant difference between all adults in two different surveys is around 7 points. Significant differences between groups within one survey are somewhat larger. In discussing differences within a survey we use consistent terminology to describe them. For example, we would call results with differences that are less than significant “similar,” and use an adjective such as “somewhat” to reflect a slight difference, or “much” to reflect a difference that we consider sizeable.

When a respondent refuses to answer a given question, the answer is coded as a refusal, which is then treated as missing data. Missing data are excluded from analysis, although missing data on one question does not exclude a respondent from the analysis of a question to which they did respond.

## Improving Response Rates

PPIC Statewide Surveys are conducted over a ten-day period to provide time for callbacks. For both cell phones and landlines, telephone numbers are called as many as eight times. When no contact with an individual is made, calls to a number are limited to six. Like other surveys, response rates in PPIC Statewide Surveys have been declining in recent years as it becomes more difficult to reach people and as people become less willing to complete telephone surveys. However, this doesn’t necessarily translate to a decline in the quality of the survey or the findings, just as a high response rate doesn’t implicitly guarantee a high-quality survey or high-quality results.

There are a number of ways to calculate response rates, but the idea generally is to determine the number of completed interviews out of the total number of eligible numbers in the sample. PPIC follows standards developed by AAPOR in calculating response rates.

## Margin of Error

Despite slight fluctuations from survey to survey, the sampling error, taking design effects from weighting into consideration, is normally about  $\pm 3.3$  percent at the 95 percent confidence level for our surveys of 1,700 adults. This means that 95 times out of 100, the results will be within about 3.3 percentage points of what they would be if all adults in California were interviewed. The sampling error for subgroups is larger. Details about sampling errors of a given survey are included in the methodology

section of each report. Sampling error is only one type of error to which surveys are subject. Results may also be affected by factors such as question wording, question order, and survey timing.

We report the margin of error taking design effects from weighting into consideration, to account for the effect sampling and weighting techniques may have on survey estimates. It is especially important to take design effects from weighting into consideration because we include cell phones in our sample.

## Adults, Registered Voters, and Likely Voters

For many survey questions, the findings are presented for registered voters or likely voters only. Respondents who report that they are citizens and that they are absolutely certain they are registered to vote in California are included in the registered voter subsamples. Findings are also presented for Democrats, Republicans, and independents. To determine a respondent's party affiliation, we ask respondents if they are registered as Democrats, Republicans, with another party (which we then ask them to specify), or as decline-to-state or no party preference (independent) voters. We ask for party registration rather than party identification because the California Secretary of State collects registration data by party. This allows us to weight the data by party, to accurately reflect the voting population. There are no state-level data available for party identification.

Our definition of likely voters is aimed at identifying frequent voters in elections—as opposed to estimating the voter turnout in an upcoming election. Using political science research on the demographic and attitudinal predictors of voting behavior, we define the registered voters in our surveys as likely voters if they (a) report voting always or nearly always, (b) also intend to vote in the upcoming election (during an election cycle), (c) also have followed election news very or fairly closely (during an election cycle), and (d) either

report having a great deal or fair amount of interest in politics, and have resided at their current residence less than five years and have at least some college education; or

report having at least a little interest in politics, and have resided at their current residence for more than five years.

## Weighting

The characteristics of PPIC Statewide Survey samples are closely comparable to characteristics of California's adult population and political party registration; however, the data are statistically weighted to account for any differences in demographics, party registration, and telephone service.

Abt Associates uses the US Census Bureau's 2016–2020 American Community Survey's (ACS) Public Use Microdata Series for California (with regional coding information from the University of Minnesota's Integrated Public Use Microdata Series for California) to compare certain demographic characteristics of the survey sample—region, age, gender, race/ethnicity, and education—with the characteristics of California's adult population (excluding those living in institutionalized group quarters housing). To estimate landline and cell phone service for adults living in households in California in 2022, Abt Associates computes a projection using the 2015 to 2019 state-level estimates released by the National Center for Health Statistics (which used data from the National Health Interview Survey (NHIS) and the ACS). The estimates for California are then compared against landline and cell phone service reported in the survey. We also use voter registration data from the California Secretary of State to compare the party registration of registered voters in our sample to party registration statewide. The landline and cell phone samples are then integrated using a frame integration weight, while sample balancing adjusts for differences across regional, age, gender, race/ethnicity, education, telephone service, and party registration groups. Demographic parameters used for weighting can be found on the next page.

Surveys almost always develop a final weight for the completed interviews that brings the weighted sample into agreement with known population distributions on key socio-demographic and geographic variables. This is especially important for RDD surveys because response rates have declined over time and the number of households that do not have traditional landline telephone service has risen.

One of the most commonly used final weighting procedures is raking (also called sample balancing). PPIC employs this procedure in weighting its survey samples. Raking is an iterative procedure that provides the ability to control on two or more marginal dimensions to derive the weights. One specifies a convergence criterion and a maximum number of iterations, and in most situations the algorithm converges and the resulting weights provide for very close control on all of the dimensions included in the raking. For PPIC surveys, data are raked to control totals on six dimensions: (1) age group by gender by region, (2) race/ethnicity by region, (3) education level, (4) party affiliation by region, (5) region, and (6) telephone usage group. During the raking procedure very high or very low weight values are trimmed to reduce the impact of the variability of the weights in the precision of the survey estimates.